DOCUMENT RESUME

ED 394 461 HE 029 157

AUTHOR Riggins, Toija A.; Frierson, Henry T., Jr.
TITLE Gender Effects on Minority Students' Perceptions of Satisfaction with a Summer Research Program.
PUB DATE 9 Apr 96
NOTE 19p.; Paper presented at the Annual Meeting of the American Educational Research Association (New York, NY, April 8-13, 1996).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Black Students; Higher Education; *Mentors; *Minority Groups; *Participant Satisfaction; *Sex Differences; Student Attitudes; *Summer Programs; Undergraduate Students
IDENTIFIERS University of North Carolina Chapel Hill

ABSTRACT

This study focuses on a 10-week program called the Summer Pre-Graduate Research Experience (SPGRE) Program at the University of North Carolina at Chapel Hill. The SPGRE has been in place for six years; it is designed to reinforce and promote graduate study through participation in directed and often on-going faculty research projects. Students are African American, Native American, or Hispanic/Latino and are drawn from colleges around the country. A majority of the students have been women. Participants complete a self-report questionnaire at the end of the program. This study examines self-report data from 180 students over a six-year period to determine whether gender is associated with students' perceptions of satisfaction with major aspects of the program. Of 180 students, 124 had male mentors, while 56 had female mentors. With the considerably lower number of women research mentors, it was expected that male student participants would be more satisfied with the program than their female peers. Study results show that overall, both male and female students rated almost every aspect of the program favorably. Students' gender was significantly associated with only two of the seven major areas examined: Males were more clearly positive that the program met their expectations and were significantly more inclined than females to perceive the program as being worth their time and effort. (Contains 18 references.) (NAV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Running Head: Gender and Satisfaction With a Summer Research Program

ED 394 461

Gender Effects on Minority Students' Perceptions of Satisfaction With a Summer Research Program

Toija A. Riggins and Henry T. Frierson, Jr.

University of North Carolina at Chapel Hill

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
Henry T. Frierson, Jr.
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Presented at the American Educational Research Association Meeting. New York, NY, April 9, 1996.

NE 029 157

BEST COPY AVAILABLE

Abstract

With discrepant numbers of female mentors, regardless of ethnicity, expectations were that general perceptions of minority male students participating in a summer research program would be more positive than their female peers. Collected student responses over six years indicated, however, small differences between genders in their satisfaction with the program.

Gender Effects on Minority Students' Perceptions of Satisfaction With a Summer Research Program

Toija A. Riggins and Henry T. Frierson Jr.

Considerable attention is being paid to the role of mentoring in the academic and professional development of students. Although the term "mentoring" has taken on broad meanings, some investigators have attempted to more clearly define the term relative to higher education by including some degree of teaching, modeling, and motivational encouragement among the duties (Blackwell, 1983; Blackburn, Chapman, and Cameron, 1981; Healy and Welchert 1990; Frierson, 1990). Others have sought to describe important variables which may lessen or increase the positive effects of mentoring on the student. The effects of gender, for example, is a central issue in the debate over the role of mentoring in higher education. Individuals such as Berg and Ferber (1983), Shapiro et al., 1980, Blaska (1974), and Astin (1969) have all maintained that gender is critical factor in effective mentoring. Goldstein (1979) further suggested that same-sex mentoring patterns are critical, and reported that same-sex mentoring relationships tend to produce more successful careers than crossed-sex partnerships.

For African American women, however, the issue of gender is likely to be further compounded by ethnicity and race. Moses (1989) contended that: (1) Black women students frequently miss out on the experience of having a mentor; (2) further, Black women faculty members and administrators are scarce and/or overburdened on many campuses; and (3)

moreover, the lack of Black women leaders on college campuses is a distinct disadvantage for Black women students. By implication, these problems are shared to a degree by women in general as men far outnumber women in faculty positions and consequently as mentors. However, as suggested by Moses and others, the climate for African American and, presumably, for other minority women on college campuses is less than ideal.

The significance of gender in mentoring relative to graduate student development appears to have gained wider recognition. For example, efforts to provide women graduate and undergraduate students with opportunities whereby they will receive mentoring are fairly numerous (Tyler, 1994). Moreover, with attention given to race and ethnicity in academic environs, there has been additional attention paid to the mentoring minority students even at the undergraduate level. One such program with that focus, the Summer Pre-Graduate Research Experience (SPGRE) Program at the University of North Carolina at Chapel Hill, attempts to involve promising minority male and female undergraduates in not only hopefully fruitful mentoring experience, but a realistic graduate-level research experience as well. These students are from colleges across the country. Many attend historically Black colleges and universities, while others are from predominantly White colleges and universities. The participants are African American, Native American, or Hispanic/Latino students, and a majority of the students have been women.

The 10-week program is designed to reinforce and promote interest in the pursuit of graduate study through participation in directed and often on-going faculty research projects. The participating students are matched with preceptors from the university faculty. Full effort is made to match students according to their research interests and the research of

prospective preceptors. Support for students is provided in the form of a stipend, food allowance, housing, a number of social activities, as well as full use of university resources.

Several evaluation studies based on interview responses have been conducted to assess the SPGRE program and to identify the extent to which various factors play a role in the students' perceptions. These studies report, as have other authors asserted, that race, gender, and college racial makeup are central factors affecting the perceptions and attitudes of students in the program (Frierson, Hargrove, and Lewis, 1992; 1993; 1994; Hargrove and Frierson, 1994). This study continues the inquiry by examining self-report, questionnaire data obtained at the end of the program.

The ratio of male to female research mentors in the SPGRE Program has been greater than 2:1, the inverse of the number of female SPGRE student participants. Of the 180 students over the 6-year period, 124 (68.9%) had male mentors and 56 (31.1%) had female mentors. Thus the intent of this study was to specifically examine whether gender is associated with students' perceptions of satisfaction with major aspects of the program. With the considerably lower number of women research mentors, it was expected that the results would indicate that the male students participants would express more satisfaction than their female peers. Moreover, 37 (20.6%) of the students had Black mentors, of which 24 (13.3%) were males and 13 (7.2%) were females. An additional four students had Asian American mentors, two females and two males, and one student had a Hispanic female mentor. The results from the questionnaire data are based on SPGRE students' responses over an six-year period.

Method

Participants

Between the years 1988 and 1994 (excluding 1990 for which data was unavailable), 170 (94.4%) of the 180 SPGRE participants for that period completed the end-of-program questionnaire. Most (86.5%) of the students had completed their junior year and the remainder were classified academically as juniors. The students were high academic achievers (the average grade point average for all participants was approximately 3.5) who expressed an active interest in obtaining experience in research with UNC-CH faculty. They represented a variety of majors, ranging from the humanities and social sciences to the physical and biological sciences.

Of the students who responded to the questionnaire, 65.1% (N=111) were females and 34.3% (N=59) were males. Of the 155 students (90.6% of the sample) who specifically responded to the question regarding their ethnicity, 81.9% (N=127) labeled themselves African American, 1.3% (N=2) were Mexican American, 3.9% (N=6) were Native American, 0.6% (N=1) was Puerto Rican, and 12.2% (N=19) responded as being "other" or "not applicable".

Of the 166 students who reported their home institution, 63.7% (N=109) reported that they came from historically Black colleges or universities, 32.7% (N=56) were from predominantly White colleges and universities, and 0.6% (N=1) was reported to be from a historically Indian institution.

Procedure

At the conclusion of each programmatic year, all students are requested to complete a questionnaire as a final on-site assessment of the program. The students complete questionnaires anonymously. The purpose of the questionnaire is seek and to determine the honest degree of students' satisfaction with their mentoring and research experiences and their satisfaction with the program in general.

Data from all completed questionnaires from the years 1988 through 1994 (except 1990) were examined and analyzed. Chi Square (χ^2) tests were used to determine the level of statistical association of gender with the students' satisfaction with various aspects of the program and their perceptions of their relationships with their SPGRE research mentors.

The students responded to questions addressing their levels of satisfaction with the program and the relationship with their mentors by responding to individual items on a series of 6-point Likert-type scales. The range on the scales were 6=very favorable to 1=very unfavorable. Seven specific questions were examined which addressed students' satisfaction with program, the relationship with their mentors, and their effort in the research enterprise. In addition to the seven Likert-type items, responses from several open-ended questions that allowed students to elaborate on their previous responses and provide suggestions for improvements to the program were examined for additional qualitative information.

Results

Of the 170 students who responded to the question, "How well did the summer

research program meet your expectations?", significantly more females than males said their expectations were met ($\chi^2=12.45$, $p=.05$). However, 86.5% (N=147) of all respondents reported that their expectations were met or exceeded.

For the question, "Given your experiences in the summer research program, are you pleased that you participated?", 170 students responded. Significantly more males responded "Yes, somewhat" or "Yes, definitely" ($\chi^2=16.40$, $p<.003$). A larger proportion of the male students endorsed the most positive response--"Yes, definitely"-- (93% of males compared to 69% of females). Overall, however,both genders responded favorably to the item-- 97% of the female students responded positively as did 100% of the males.

In response to the statement, "The total program was worth my time and effort," male students proportionately responded more favorably, although their responses did not did not differ statistically, at the .05 level, from their female colleagues ($\chi^2=14.33$, $p<.074$). Regardless of gender, however, of the 165 who responded to the statement, 83% indicated that they either "agree[d]" (93 students) or "strongly agree[d]" (48 students) with the statement.

Regarding participants' perceptions of their relationships with their mentors, gender did not appear to play a significant role in that area. In responding to the statement, "My relationship with my mentor was productive," the majority, 54% (or N=93), of the 170 responding students endorsed the "strongly agree" option, while an additional 46 students (27%) indicated that they "agree[d]" with this statement. There were no differences associated with gender ($\chi^2=11.83$, $p<.30$).

The additional statement phrased, "Overall, I found my relationship with my mentor

to be positive and satisfying," was also most positively ("Strongly Agree") endorsed by the majority (54%--N=92) of the respondents. Again, no significant gender-related effects were found ($\chi^2=12.61$, $p<.25$). Similarly, there was no effect of gender on the degree to which respondents rated their "effort regarding [their] specific research activity or project," ($\chi^2=12.05$, $p<.149$). Moreover, a large proportion of the students (46%--N=78) described the effort they expended on their research activity as "very favorable".

Table 1 presents an overview of the percent of positive responses by both female and male students in the seven major areas addressed in this study. The mean percentage of positive responses was 96% for male participants and 90% for the female students. Table 2 provides an example of positive responses to the open-ended items. statements

---

Insert Table 1 about here

Insert Table 2 about here

Discussion

The results indicated that for participants in the summer research program, the students' gender was significantly associated with the only two of the seven major areas examined. Those areas were the degree to which the students perceived the program meeting

their expectations and whether they were pleased that they participated. While the responses of both genders were overwhelmingly positive regarding whether the program met their expectations, the male students were more clearly positive (responding that the program exceeded or met expectations) than their female peers--96.6% and 80.2% for male and female students, respectively. Additionally, male students were more unequivocal in their responses to whether they were pleased they participated in the research program--93.2% of the males responded "yes, definitely" compared to 69.4% for the female students.

Another area were discernible differences were noticed was whether the students thought the 10-week program was worth their time and effort. Although the results did not significantly differ statistically, male students were more inclined to perceive the program as being worth their time and effort. Again, however, an overwhelming number of both male (100%) and female (93.5%) students responded positively to the item.

Another factor that may have had a significant bearing on the male students' greater perceived satisfaction, was the gender of most preceptors. Almost 70% of the preceptors were male, and with a greater number of male mentors, the probability of males students with male mentors was of course greater. Consequently, if, as suggested by Berg and Ferber (1983), Shapiro et al. (1980), Blaska (1974), and Astin (1969), that same-sex-mentor-student pairs is a more desirable arrangement for role modeling and so forth, and also serves to reduce cross-gender conflicts, the male students were more likely to find themselves under those conditions; and they may more readily perceive their situation more positively than females who were likely also to have male mentors.

Additionally, it seems reasonable that a larger percentage of male than female

respondents would report greater overall satisfaction with the program, because the SPGRE program is conducted at a major research university where few minority women faculty are present. For example, at UNC-CH in 1994, there were only 33 African American women faculty out of a total of 2,297 (the number of African American male faculty was 51) and only 13 SPGRE students had African American women mentors and only one had a Hispanic female mentor. Moreover, it should be kept in mind that a number of the female mentors had male students. Consequently, it is possible that the female students might have reacted not only to the low number of minority female mentors present in the program and the low number of female students with female mentors but the overall low presence number of minority female faculty on the UNC-CH campus as well. The noticeable lower reported rate of satisfaction among female participants may be an artifact of the absent or reduced opportunity for interaction with female mentors and in particularly those from who were faculty of color. These reactions to the social, academic, and physical climate of a large, research university could presumably be revealed in the collected questionnaire data.

Intriguingly, the greater than 2:1 female to male student ratio could partially explain the greater relative satisfaction of the male SPGRE students. Academic and research interests withstanding, the male participants may have perceived greater satisfaction from the program as a result of the heightened probability of social interactions with the proportionately large number of female students in the program. As these were college students, for many males, this larger female-to-male ratio created a greater opportunity to meet and interact with a significant number of females.

Generally however, despite the few observed differences in student responses, the

response of the students toward the program were quite positive. Overall, both male and female students rated almost every aspects of the program quite favorably. They reported satisfaction not only with their mentoring experiences, but with their relationships with peers, and staff. The students were also satisfied with campus facilities.

A large proportion of the students reported a continued and/or enhanced interest in pursuing graduate studies and/or a career in academia. Notably, 63% of the SPGRE students who have graduated from baccalaureate programs have pursued or completed graduate programs; another 20% pursued or completed post-baccalaureate professional programs such as medicine and law.

Future studies to explore factors which lead to successful cross-race, cross-gender, as well as same-race and same-gender mentor-students pairs would help serve as models from which future research programs targeted for specific populations could be based. Additionally, data on female students might shed light on the dynamics that exist among minority women students as they attempt to compete in such a setting. The data from both male and female students might help delineate the variables necessary for the successful completion of graduate programs by minority students.

In light of the heated political debate over the fate and appropriateness of affirmative action programs, the implications for the future of similar programs of the type examined here are unclear. Given the disparate representation of minority graduate students and particularly the low representation of minority doctoral recipients and faculty in colleges and universities the need for attention to this issue continues. If however, equity continues to be a desirable goal and is to be achieved at academic institutions, attention must continually be

paid to creating rich opportunities for all students to enter and complete graduate degree programs. Proportionately few minority students seriously consider doctoral programs in graduate school or research and academic careers. Summer research programs for undergraduate students, such as SPGRE, can played a major role in providing equal access and opportunities for students to embark upon academic and research careers via graduate school. Clearly, the responses of students, both male and female, speak to the value and need of research programs for undergraduate minority students.

REFERENCES

Adams, H.G. (1992). Mentoring: An Essential Factor in the Doctoral Process for Minority Students. Pamphlet by the GEM Program, Notre Dame, IN.

Astin, H.S. (1969). *The Woman Doctorate in America*. New York: Russell Age Foundation.

Berg, H.M. and Ferber, M.A. (1983). Men and women graduate students: Who succeeds and why? *Journal of Higher Education*, 54(6), 629-648.

Blackburn, R.T. (1981). Cloning in America: mentorship and academic careers. *Research in Higher Education*, 15, 315-327.

Blaska, B. (1976). Women in academe: The need for support groups. *Journal of the National Association of Women Deans, Administrators, and Counselors*, 39(4), 173-177.

Tyler, M.D. (1993). *Enhancing the Minority Presence in Graduate Education V: Summer Research Opportunity Programs: Voices and Visions of Success in Pursuit of the Ph.D.*, Council of Graduate Schools: Washington, D.C.

Frierson, H.T. (1990). The situation of Black educational researchers: Continuation of a crisis. *Educational Researcher*, 19, 12-17.

Frierson, H.T., Hargrove, B.K., and Lewis, N.R. (1992). Preceptor Race and Gender: Effects on Black Undergraduates' Attitudes and Perceptions in a Summer Research Program. Presented at the 1992 American Educational Research Association Meeting, San Francisco, CA.

Frierson, H.T., Hargrove, B.K., and Lewis, N.R. (1993). Gender and Type of School

Attended: Effects on African American Students' Perceptions Related to a Summer Research Program. Presented at the American Educational Research Association Annual Meeting, Atlanta, GA.

Frierson, H.T., Hargrove, B.K., and Lewis, N.R. (1994). Black Summer Research Students' Perceptions Related to Research Mentors' Race and Gender. *Journal of College Student Development*, 35, 475-480.

Goldstein, E. (1979). The Effect of Same-sex and Cross-sex Role Models upon Subsequent Academic Productivity of Scholars. *American Psychologist*, 34, 407-410.

Girves, J.E., and Wemmerus, V. (1988). Developing Models of Graduate Student Degree Progress. *Journal of Higher Education*, 59 (2), 163-189.

Hargrove, B.K. and Frierson, H.T. (1994) Assessing African American students' attitudes toward research and perceptions of faculty preceptors as outcomes of a summer research experience. In Hood, S. and Frierson, H.T. (eds.) *Beyond the Dream: Meaningful Program Evaluation and Assessment to Achieve Equal Opportunities for Minorities at Predominantly White Universities*. Greenwich, CT: JAI Press, Inc.

Healy, C.C. and Welchert, A.J. (1990). Mentoring relations: A definition to advance research and practice. *Educational Researcher*, 19, 17-21.

Jacobi, M. (1991). Mentoring and Undergraduate Success: A Literature Review. *Review of Educational Research*, 61(4), 505-532.

Kram, K.E. (1983). Phases of the Mentor Relationship. *Academy of Management Journal*, 26(4), 608-625.

Merriam, S.B. (1983). Mentors and Proteges: A Critical Review of the Literature. *Adult*

Education Quarterly, 33(3), 161-173.

Merriam, S.B., Thomas, T.K., and Zeph, C.P. (1987). Mentoring in Higher Education: What We Know Now. *The Review of Higher Education,* 2(2), 199-210.

Moses, Y.T. (1989). Black Women in Academe: Issues and Strategies. Project on the Status and Education of Women, Washington, D.C.

Shapiro, E.C., Hazeltine, F.P., and Rowe, M.P. (1980). Moving up: Role models, mentors, and patron system. *Sloan Management Review*, 19, 51-58.

Table 1

Percent of Female and Male Student SPGRE Participants Responding Postively to the Seven Areas Addressing Satisfaction with Program and Mentors

	Females (n = 111)	Males (n = 59)
Program met expectations	94%	100%
Pleased participated in program	100%	100%
Program worth time and effort	93%	100%
Productive relationship with mentor	94%	97%
Positive/satisfying relationship with mentor	89%	95%
Pleased with effort regarding research	91%	98%
Program stimulated interest in research area	66%	80%
Mean Response	90%	96%

Table 2

Examples of Positive Statements By Students Regarding Program Satisfaction

"I enjoyed the program and the workshops. [The program] gave me a good idea of what grad school demands. I have because of the program decided to pursue a career in chemistry."

"Overall the program was wonderful; I believe it succeeds in its intentions."

The program on a whole was great and if a GA [graduate assistant] is needed next year upon my notification of [acceptance to] grad school here I would love to be one."

Overall I enjoyed the program. I feel my summer was well spent. I learned a lot, made a lot of friends, and also a lot of connections."

"I felt it was a great experience and it met its outlined goals. In my eyes the program needs no improvement."

"In one sentence, the program was exceptional in scope and an invaluable experience."

"Great program. Great experiences. Will highly recommend to others."

"I really enjoyed the research experience and it confirmed my interest in my field as well as pursuing graduate school."

"The program was very beneficial to me. I enjoyed it and will be glad to pass the experience on to my colleagues at my school."

"I really enjoyed the program. I can't express what a great experience this has been."

"I enjoyed the program. Overall it was great. I'd participate again if I could."

"The overall experience was excellent and I would do it again."

"I just simply wish this program can be continued. It is a very special opportunity, a real privilege."

"This program is a very useful tool in the development and growth of minority students. It has left a life-long impression on me. I hope other students will have this chance. Thank you very much for having me."

"I Thought it was wonderful that we were left alone to do our own thing with our mentor. That's how it would be in grad school."

"This has been a great summer. Perhaps the best in my life in terms of learning experiences."